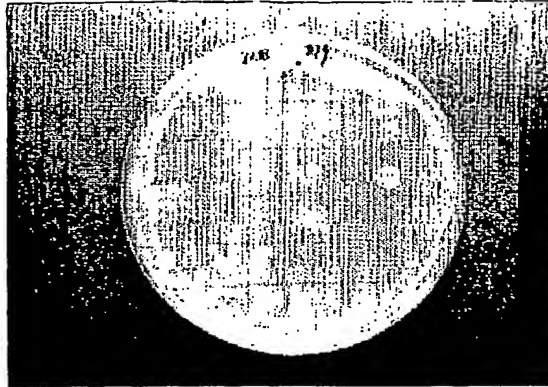


**Figure 1****A.****B.**

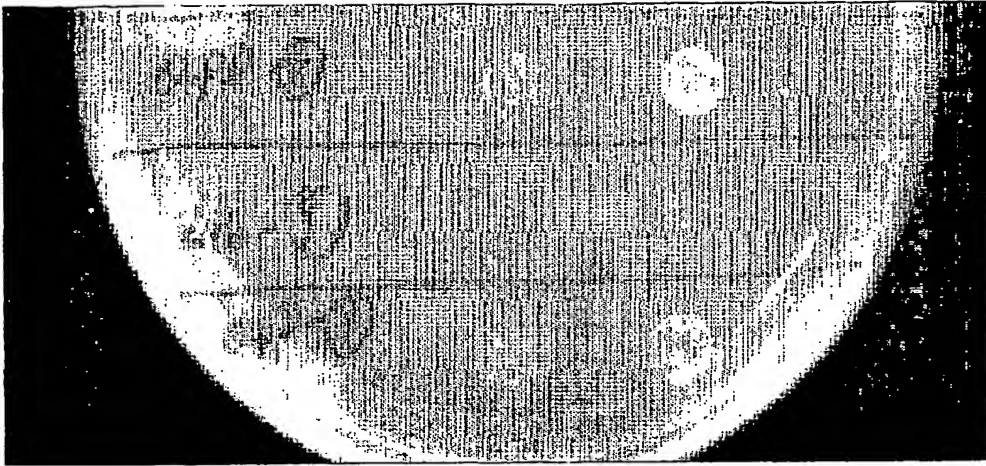
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**Figure 2**



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Figure 3

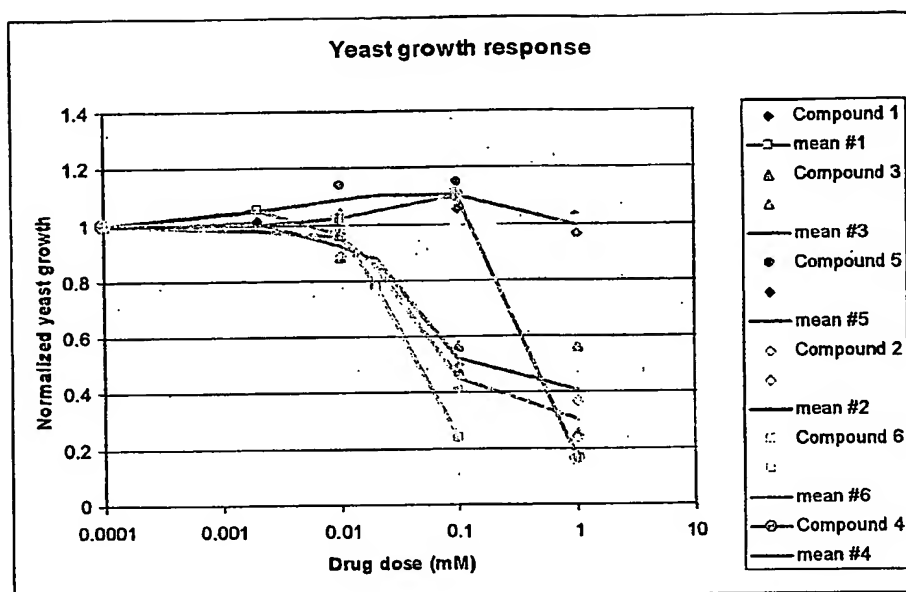
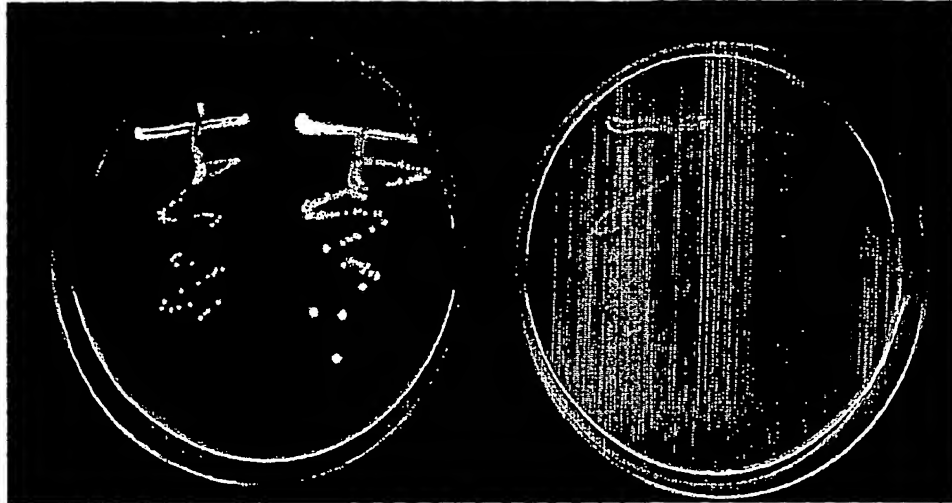


Figure 4

## Alignment of Voltage-Gated Potassium Channels Relevant Regions

hKv1.1	PYFITLGTETIAEQ-----EGNQKGEQATSLAILRVIRLVRFVRIFKLSRHSGK
mKv1.2	PYFITLGTETIAEKP-----EDAQQGQQAMSLAILRVIRLVRFVRIFKLSRHSGK
Kv1.4	PYFITLGTDLAQQQG-----GGNGQQQQAMSFALLRIIRLVRFVRIFKLSRHSGK
Kv1.3	PYFITLGTETIAERQ-----GNGQQAMSLAILRVIRLVRFVRIFKLSRHSGK
hKv1.5	PYFITLGTETIAEQPPGG-----GGGGQNGQQAMSLAILRVIRLVRFVRIFKLSRHSGK
ShakerB	PYFITLATVVAEEEDTLNLPKAPVSPQDKSSNQAMSLAILRVIRLVRFVRIFKLSRHSGK
rKv3.1	PFYLEVG-----LSGLSKAAKDVLFGLRVVRFVRIIRLIRFKLTRHFVG
rKv2.1	PYYVTIFLTESNKS-----VLQFQNVRRVQIFRIMRILRLILKLARHSTG
hKv4.2	PYYIGLVMTDNEDVS-----GAFVTLRVFRVRFVRIKFESRHSGQ
hKv1.1	LQILGQTLKASMRELGLLIFFLFIGVILFSSAVYFAEAE-----EAESHFSSIPDA
mKv1.2	LQILGQTLKASMRELGLLIFFLFIGVILFSSAVYFAEAD-----ERDSQFPSIPDA
Kv1.4	LQILGHTLRASMRELGLLIFFLFIGVILFSSAVYFAEAD-----EPTTHFQSSIPDA
Kv1.3	LQILGQTLKASMRELGLLIFFLFIGVILFSSAVYFAEAD-----DPTSGFSSIPDA
hKv1.5	LQILGKTLQASMRELGLLIFFLFIGVILFSSAVYFAEAD-----NQGTHFSSIPDA
ShakerB	LQILGRTLKASMRELGLLIFFLFIGVILFSSAVYFAEAG-----SENSEFKSSIPDA
rKv3.1	LRVLGHTLRASNEFLLLIIFLALGVLI FATMIYYAERIGAQPNDPSASEHTHFNIPIG
rKv2.1	LQSLGFTLRSSYNELGLLILFLAMGIMIFSSLVFFAEKD-----EDDTKFKSIPAS
hKv4.2	LRILGYTLKSCASELGFLFLSLTMAIIIFATVMFYAEKG-----SSASKFTSIPAA
hKv1.1	FWWAVVSMTTVGYGDMYPVTIGGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETEGE
mKv1.2	FWWAVVSMTTVGYGDMVPVTIGGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETEGE
Kv1.4	FWWAVVTMTTVGYGDMKPITVGGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETEGE
Kv1.3	FWWAVVTMTTVGYGDMHPVTIGGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETEGE
hKv1.5	FWWAVVTMTTVGYGDMRPITVGGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETDHE
ShakerB	FWWAVVTMTTVGYGDMTPVGWVGKIVGSLCAIAGVLTIALPVPVIVSNFNIFYHRETDQE
rKv3.1	FWWAVVTMTTLGYGDMYPQTWSGMLVGALCALAGVLTIALPVPVIVNFMGYSLAMAKQ
rKv2.1	FWWATITMTTVGYGDIYPKTLGKIVGGLCCIAGVLVIALPIPIIVNNFSEFYKEQKRQE
hKv4.2	FWYTIVTMTTLGYGDMVPKTIAGKIFGSICSLSGVLVIALPVPVIVSNFISRIYHQNRAD

**Figure 5****A.****B.**